



## Techwave

Techwave established in 2004, is a global end-to-end IT services & solutions company, which develops long-term relationship with clients by leveraging unique delivery models and expert frameworks.

## LiDAR SOLUTIONS FOR WESTERN AUSTRALIA'S REMOTE ENERGY PROVIDER

### About Client

Western Australia receives electricity supplies from, a state government-owned power provider which is commercially inclined. In its service region, it oversees producing, acquiring, distributing, and retailing energy to residential, commercial, and industrial users as well as resource projects. Well over 100,000 people, 47,000 connections, and more than 10,000 enterprises in rural and regional areas are supplied with energy by the client. They are responsible for 38 systems: the Northwest Interconnected System (NWIS) in the Pilbara, the network connecting Kununurra, Wyndham, and Lake Argyle, as well as 34 standalone systems spread throughout rural Western Australia.

### Executive Overview

The client's primary goal is to manage and operate the power network safely and securely. The client's vast network channels required external AI capability for better assessment. Techwave provided extensive LiDAR processing services for the client. Our partner, Geospatial and asset management service provider, has been a pivotal support system in delivering superlative aerial geomatics and surveys across Western Australia. We audited their networks with our staunch best practices while being economical by utilizing an offshore approach.



#### **GIS Cleaning:**

A complete revision of the client's current GIS network to incorporate all recent modifications



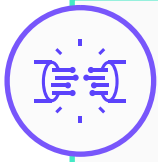
#### **Road Cleaning:**

All road polygons that are 30 meters or less from GIS span lines and solo poles were cleaned.



#### **Pole top image review:**

Each and every pole of the network had numerous images captured, which were assessed and the best image was added to the associated pole in the GIS.



#### **Service Wire Treatment:**

The building attachment point for each service connection is verified for accuracy across all service wires.



#### **Segment Review – Span:**

Classifying the network and neighbourhood's LiDAR data in order to detect vegetation and other human-made encroachments.



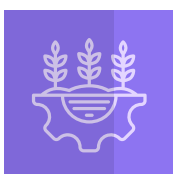
#### **Segment Review – Poles:**

By identifying the pole base and top using the LiDAR data, a pole shaft is created.

## **Current Status**

Techwave has been dedicated to this project for over a year, diligently collecting data insights from over 40 specialized resources to meet the project's goals and requirements. Among the crucial aspects of Vegetation Management & Bushfire Mitigation is the ability to report potential threats effectively. To achieve this, our skilled team thoroughly analyzed LiDAR data inputs and successfully identified various risks for each area. Implementing a systematic process flow for each module has enabled resources to swiftly familiarize themselves with the current processes, ensuring immediate productivity upon integration.

## **Client's Challenges**



#### **Vegetation Hazard Management Cycles:**

Create and execute a strategy for periodically identifying, addressing, and inspecting vegetation risks.



### Bushfire Risk Assessment:

An assessment of the fire risk associated with the operation of electricity assets as assessed by the customer's utilizing information, direction, and expertise from relevant sources. Bushfire risk assessments are used to determine the various degrees of hazard in a bushfire-prone area, which are then used to set priorities and treatments. The likelihood and effects of a possible threat are assessed, and a schedule of prioritized bushfire prevention measures is then offered to lessen hazards to the location.



### Vegetation Hazard Remediation:

Create and put into action a number of road maps for the frequent detection and mitigation of risks posed by vegetation that grow- in and fall- in.

- Minimum Clearing Standards
- Bushfire Danger Period Preparedness
- Fall-in Vegetation Hazards
- Hazard Remediation Prioritization
- Special Circumstances and Exceptions

## Techwave's Strategy and Solutions

Through the combined efforts of all stakeholders involved, we successfully crafted methods and solutions specifically tailored to meet the client's expectations.

» 01



The client's entire network was surveyed using remote sensing techniques, including airborne, mobile, and terrestrial methods, with data collected from various sources such as LiDAR, images, and others.

» 02



Integration of pole top photos with encrypted GIS data was conducted to enhance the analysis.

» 03



The analysis included LiDAR-based vegetation categorization and assessments of conductors and cross-arms for span and pole segments, as well as a detailed study of tile, pole, and span sections.

» 04



Services were allocated using QGIS software and AIMS Clearance Segment Review, ensuring effective completion of tasks and resource management.

## Business Impact

During extremely challenging execution times, we collaborated with more than 40 engineers to produce bulk volumes within tight time limits.

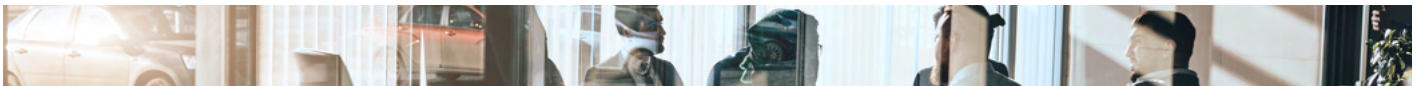
In this collaboration, the finest quality power distribution and transmission network assets totalling close to 40,000 spans/poles were supplied.





## Why Choose Techwave?

Techwave excels in delivering innovative solutions to complex business challenges. Renowned for its commitment to subject expertise and resource optimization, Techwave has built a strong reputation for providing customers with top-notch services and products. Empowered with the latest technologies and tools, Techwave's team of over 1000 dedicated engineers can provide comprehensive end-to-end assistance to clients.



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